Claims

[c1] 1.In a label printer having a cover portion frame and a base portion frame, a label printer registration assembly comprising:

a registration device securable to the base portion frame of the label printer, and

a print head assembly mountable to the cover portion frame of the label printer, the print head assembly comprising:

a variably loadable print head for printing to a label media; and

a registration face attached to the print head;

wherein the registration face is engageable with the registration device to maintain registration between the print head and the registration device.

[c2] 2.The registration assembly of claim 1 wherein the registration device is a registration roller.

[c3] 3.The registration assembly of claim 2 wherein the registration roller is a platen roller.

[c4] 4.The registration assembly of claim 3 wherein the registration face attached to the print head includes a notch and the platen roller includes a shaft portion having a groove and the registration face notch is engageable with the platen roller shaft groove.

[c5] 5.The registration assembly of claim 4 wherein the registration face notch comprises a substantially U-shaped portion.

[c6] 6.The registration assembly of claim 3 wherein the platen roller can rotate about an axis of rotation.

[c7] 7.The registration assembly of claim 6 wherein the variably loadable print head can be variably loaded to a media-specific load and wherein the registration face can engage the platen roller such that the print head is substantially prevented from moving both axially and transversely with respect to the axis of rotation about which the platen roller can rotate.

[c8] 8.The registration assembly of claim 1 wherein print head assembly further

comprises:

a print head lift cam connected to the cover portion frame; and

print head assembly pin in operative association with the print head lift cam, the pin housing a print head load spring; and

wherein the load spring housed within the print head assembly pin can be compressed via rotation of the cam so as to transfer a media-specific load to the label media.

[c9] 9.The registration assembly of claim 8 wherein the print head assembly further comprises:

a print head mount connected to the print head assembly pin; and

a print head pivot pin;

wherein the print head pivot pin passes through, so as to pivotally connect, the print head assembly pin and the print head mount.

[c10] 10.The registration assembly of claim 1 wherein the print head is a thermal print head.

[c11] 11.The registration assembly of claim 1 wherein the registration device is a shaft.

[c12] 12.A label printer comprising:

a cover portion having a cover portion frame attached to the cover portion;

a base portion having a base portion frame, the base portion frame connected to the base portion and to the cover portion frame; and

a dot line registration assembly comprising:

a registration roller securable to the base portion frame of the label printer, and

a print head assembly mountable to the cover portion frame of the label printer, the print head assembly comprising:

a variably loadable, thermal print head for printing a dot line to a label media; and

a registration face attached to the print head;

wherein the registration face is engageable with the registration roller to maintain dot line registration between the thermal print head and the registration roller.

[c13] 13.The label printer of claim 12 wherein the registration roller comprises a groove and the registration face comprises a notch for engaging the groove in the registration roller.

[c14] 14.The label printer of claim 13 wherein the notch comprises a substantially U-shaped portion.

[c15] 15.The label printer of claim 12 wherein the registration roller is a platen roller.

[c16] 16.The label printer of claim 15 wherein the platen roller can rotate about an axis of rotation.

[c17] 17.The label printer of claim 16 wherein the variably loadable print head can be variably loaded to a media-specific load and wherein the registration face can engage the platen roller such that the print head is substantially prevented from moving both axially and transversely with respect to the axis of rotation about which the platen roller can rotate.

[c18] 18.The label printer of claim 12 wherein print head assembly further comprises:
a print head lift cam connected to the cover portion frame; and
print head assembly pin in operative association with the print head lift cam, the pin housing a print head load spring; and
wherein the load spring can be compressed via rotation of the cam so as to transfer a media-specific load to the label media.

[c19] 19.In a label printer having a cover portion with a cover portion frame attached to the cover portion and a base portion with a base portion frame attached to the base portion and the cover portion frame, a dot line registration assembly, the dot line registration assembly comprising:
a platen roller, rotatable about an axis of rotation, the platen roller having a pair of shaft portions, with each of the shaft portions having a groove formed therein, the platen roller shaft portions securable to the base portion frame of the label printer; and
a print head assembly mountable to the cover portion frame of the label printer, the print head assembly comprising:
a variably loadable print head for printing a dot line to a label media, the print

head variably loadable to a media-specific load; and
a pair of opposing registration faces attached to the print head, the pair of opposing registration faces each having a notch formed therein; and
wherein each of the registration face notches are engageable with the grooves of the platen roller shaft portions so as to maintain dot line registration by substantially preventing both axial and transverse movement of the print head with respect to the platen roller axis of rotation.

[c20] 20.The dot line registration assembly of claim 19 wherein at least one of the registration face notches comprises a substantially U-shaped portion.

[c21] 21.The dot line registration assembly of claim 19 wherein both of the registration face notches comprise a substantially U-shaped portion.

[c22] 22.The dot line registration assembly of claim 19 wherein print head assembly further comprises:
a print head lift cam connected to the cover portion frame; and
print head assembly pin in operative association with the print head lift cam, the pin housing a print head load spring; and
wherein the load spring is compressed via rotation of the cam so as to transfer a media-specific load to the label media.

[c23] 23.The dot line registration assembly of claim 22 wherein the print head assembly further comprises:
a print head mount connected to the print head assembly pin; and
a print head pivot pin;
wherein the print head pivot pin passes through, so as to pivotally connect, the print head mount assembly pin and the print head mount.

[c24]

24.A method of printing to a label media, the method comprising:
providing a dot line registration assembly, the dot line registration assembly including: a registration roller securable to a base portion frame of a label printer; and a print head assembly mountable to a cover portion frame of the label printer, the print head assembly including: a variably loadable, thermal print head for printing the registered dot line to the label media; and

registration face attached to the print head;
engaging the registration face with the registration device so as to achieve and maintain dot line registration;
loading the variably loadable print head to a label media-specific load to achieve loaded registration between the print head and the registration roller; and
thermally printing, at the media-specific load, a dot line to the label media, using the print head.

[c25] 25.The method of claim 24 wherein the registration face includes a notch and the registration roller is a platen roller having a shaft portion with a groove as part of providing the dot line registration assembly.

[c26] 26.The method of claim 25 wherein engaging includes engaging the registration face notch with the platen roller shaft groove.

[c27] 27.The method of claim 25 wherein the registration face notch includes a substantially U-shaped portion.

[c28] 28.The method of claim 24 wherein loading to a media-specific load is accomplished using values stored on a memory device in operable association with a label media supply.

[c29] 29.The method of claim 26 further comprising substantially preventing both axial and transverse movement of the print head with respect to an axis about which the platen roller rotates.

[c30] 30.The method of claim 24 further comprising unloading the variably loadable print head while the print head and the registration roller are engaged so as to achieve and maintain unloaded registration.

[c31]

31.A printing system for use in a label printer having a cover portion with a cover portion frame attached to the cover portion and a base portion with a base portion frame attached to the base portion and the cover portion frame, the printing system comprising:
a label media supply for supplying a label media;

an ink ribbon supply for supplying a thermally-sensitive ink to the label media; and

a dot line registration assembly comprising:

a platen roller, rotatable about an axis of rotation, the platen roller having a pair of shaft portions, with each of the shaft portions having a groove formed therein, the platen roller shaft portions securable to the base portion frame of the label printer; and

a print head assembly mountable to the cover portion frame of the label printer, the print head assembly comprising:

a variably loadable print head for printing a dot line to the label media, the print head variably loadable to a media-specific load; and

a pair of opposing registration faces attached to the print head, the pair of opposing registration faces each having a notch formed therein;

wherein the ink ribbon and label media can pass in overlay relationship with each other between the print head and the platen roller; and

wherein each of the registration face notches are engageable with the grooves of the platen roller shaft portions so as to maintain dot line registration by substantially preventing both axial and transverse movement of the print head with respect to the platen roller axis of rotation.